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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,836	02/25/2002	Masahiko Yukawa	09792909-5346	1041

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EXAMINER

DANIELS, ANTHONY J

ART UNIT PAPER NUMBER

2615

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/082,836	YUKAWA ET AL.	
	Examiner	Art Unit	
	Anthony J. Daniels	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/8/2005 has been entered.

Claim Objections

2. Claims 1 and 5 are objected to because of the following informalities. In claims 1 and 5, lines of the claim where “chip of” is recited should be changed to chip of a (the). Appropriate correction is required.

Response to Arguments

3. Applicant's arguments filed 9/28/2005 have been fully considered but they are not persuasive.

In regard to applicant's arguments on p. 4, the examiner respectfully disagrees with the statement by applicant that, “...CCD “17” is a CCD chip having an imaging surface 33. The CCD chip 17 in Figure 1 of Tamura is not contained in any sensor package...” It is evident from the Figure 4 of Tamura et al. that the package is CCD “17”. The image-receiving surface is the chip of what Tamura et al. calls the CCD. An examination of sensor packages in the prior art will show that the “CCD” of Tamura et al. is indeed a sensor package. Mogamiya, which has been

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cited in the prosecution for different reasons, proves the examiner's point. A quick examination of Mogayima in Figure 2, shows how the casing "11" is not part of the chip. This is a substantially identical configuration to that in Tamura et al., Figure 4. Furthermore, the walls to the side of the image-sensing surface in Tamura et al. do not convert light to charge.

In regard to applicant's arguments on p. 4, the examiner respectfully disagrees with the statement by applicant that, "...the Examiner has resorted to hindsight analysis in combining Tamura with Mogamiya. Mogamiya does not teach or suggest mounting an image pickup device at an opening in a circuit board and, neither Magomiya nor Tamura suggest using a glass cover to protect the image pickup device..." The examiner has not relied upon Magomiya to teach mounting an image pickup device at an opening in a circuit board. Tamura et al. has taught this feature. The examiner has used Magomiya to teach sealing a sensor package with a **glass** cover. The examiner submits that hindsight analysis cannot exist if the motivation for combination exists in the secondary reference (see Mogamiya, [0037], Lines 13,14). The examiner further submits that Magomiya unequivocally and absolutely teaches a glass cover as the seal (see Citations for claim 9).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claim 5 stands rejected under 35 U.S.C. 102(b) as being anticipated by Tamura et al. (US # 5,130,804).

As to claim 5, Tamura et al. teaches a method of producing a solid-state image pickup device (see Figure 1) comprising the steps of: providing a circuit board with an opening (see Figure 1, circuit board "B"; opening "35"); joining a sensor package (see Figure 1, CCD "17"), in which a chip of a solid-state image pickup element (Figure 4, image sensing surface "33") has been previously sealed (Figure 7; *{The structure of the CCD in Figure 7 shows that the solid-state device is sealed in by the sides of the CCD package which contain the terminals "51".}*), to one surface of the circuit board so that a light-receiving surface of the chip of the solid-state image pickup element opposes the opening (see Figure 1, "18","17", and "35"; Col. 3, Lines 65,66); and disposing and joining an optical unit (Figure 1, optical unit "18") at and to the other surface of the circuit board so that incident light is focused on the light-receiving surface (Col. 3, Lines 65-68; Col. 4, Lines 1,2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (see Patent Number above) in view of Mogamiya (US 20010007475).

As to claim 1, Tamura et al. teaches a solid-state image pickup device (see Figure 1) comprising: a circuit board (see Figure 1, circuit board “B”) having an opening (see Figure 1, opening “35”); a sensor package (see Figure 1, CCD “17”) in which a chip of a solid-state image pickup element with a light-receiving surface is placed, the sensor package disposed at one surface of the circuit board so that the light-receiving surface of the chip of the solid-state image pickup element opposes the opening (see Figure 1, “18,” “17,” and “35”; Col. 3, Lines 65,66); and an optical unit (see Figure 1, lens unit “18”) disposed at the other surface of the circuit board so that incident light is focused on the light-receiving surface (see Figure 1; Col. 3, Lines 66-68, Col. 4, Lines 1,2; Also see Col. 4, Lines 61-66). The claim differs from Tamura et al. in that it further requires a seal adhered to the sensor package for sealing in the solid-state image pickup element.

In the same field of endeavor, Mogamiya teaches a sensor package (Figure 2, casing “11”) containing a solid-state image pickup element located at the base of the casing opposing the opening (Figure 1, solid state imaging device “13”; [0037], Lines 1-4), a glass seal hermetically sealing the casing and the solid-state imaging device (Figure 1, cover glass “15”; [0037], Lines 13,14). In light of the teaching of Mogamiya, it would have been obvious to one of ordinary skill in the art to include a glass seal on top of the CCD package of Tamura et al. (see Tamura et al., Figure 7), because an artisan of ordinary skill in the art would recognize that this would effectively shield the solid-state image pickup device from open air (see Mogamiya, [0037], Lines 13,14).

As to claim 9, Tamura et al., as modified by Mogamiya, teaches a solid-state image pickup device according to claim 1, wherein the seal is a glass seal (see Mogamiya, Figure 1, cover glass "15"; [0037], Lines 6-14).

6. Claims 2,3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (see Patent Number above) in view of Mogamiya (see Patent Number above) and further in view of Ackland et al. (Non-Patent Literature).

As to claim 2, Tamura et al., as modified by Mogamiya, teaches a solid-state image pickup device of claim 1, including a sensor package (see Figure 1, CCD "17"). The claim differs from Tamura et al., as modified by Mogamiya, in that it further requires that the sensor package include a signal processing circuit for processing a signal of the solid-state image pickup element.

In the same field of endeavor, Ackland et al. teaches a signal processing circuit on the same chip as the CCD sensor package (see Figure 1: Conventional Multimedia camera). In light of the teaching of Ackland et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the CCD sensor package of Tamura et al., as modified by Mogamiya, to include the signal processing circuitry of Ackland et al. Such a modification would allow for all of the processing to be done on a single chip; consequently, consuming less power and would allow for less space to be taken up on the circuit board.

As to claim 3, the limitations of claim 3 can be found in claim 2. Therefore, claim 3 is analyzed and rejected as previously discussed with respect to claim 2.

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7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (see Patent Number above) in view of Mogamiya (see Patent Number above) and further in view of Tullis (US # 6,535,243).

As to claim 4, Tamura et al., as modified by Mogamiya, teaches a solid-state image pickup device of claim 1. The claim differs from Tamura et al., as modified by Mogamiya, in that it further requires that the circuit board be connected to an external device without a connector.

In the same field of endeavor, Tullis teaches a connection between a computer and a digital camera via a wireless link (see Abstract, Lines 1-4; Figure 1; Col. 3, Lines 62-67). In light of the teaching of Tullis, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Tamura et al., as modified by Mogamiya, to include a wireless link to an external device. Such a modification would save space on the circuit board due to the smaller size of antennas to connectors.

8. Claims 6,7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (see Patent Number above) in view of Ackland et al. (Non-Patent Literature).

As to claim 6, Tamura et al. teaches a method of producing a solid-state image pickup device according to claim 5. The claim differs from Tamura et al. in that it further requires that the sensor package include a signal processing circuit for processing a signal of the solid-state image pickup element.

In the same field of endeavor, Ackland et al. teaches a signal processing circuit on the same chip as the CCD sensor package (see Figure 1: Conventional Multimedia camera). In light

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of the teaching of Ackland et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the CCD sensor package of Tamura et al. to include the signal processing circuitry of Ackland et al. Such a modification would allow for all of the processing to be done on a single chip; consequently, consuming less power and would allow for less space to be taken up on the circuit board.

As to claim 7, the limitations of claim 7 can be found in claim 6. Therefore, claim 7 is analyzed and rejected as previously discussed with respect to claim 6.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (see Patent Number above) in view of Tullis (see Patent Number above).

As to claim 8, Tamura et al. teaches a method of producing a solid-state image pickup device according to claim 5. The claim differs from Tamura et al. in that it further requires that the circuit board be connected to an external device without a connector.

In the same field of endeavor, Tullis teaches a connection between a computer and a digital camera via a wireless link (see Abstract, Lines 1-4; Figure 1; Col. 3, Lines 62-67). In light of the teaching of Tullis, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Tamura et al. to include a wireless link to an external device. Such a modification would save space on the circuit board due to the smaller size of antennas to connectors.

Conclusion

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Daniels whose telephone number is (571) 272-7362.

The examiner can normally be reached on 8:00 A.M. - 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AD
2/7/2006


NGOC-YEN VU
PRIMARY EXAMINER